

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/014308

International filing date (day/month/year)
14.12.2004

Priority date (day/month/year)
18.12.2003

International Patent Classification (IPC) or both national classification and IPC
F27D19/00, F27D23/02, F27B9/30, F27B9/40, B21B28/04, C03B35/16, B65G13/02, B65G43/08, F27B9/24

Applicant
TECHINT COMPAGNIA TECNICA INTERNAZIONALE S.P.A.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1b/s(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

10/202044
AP3 Rec'd PTO 07 JUN 04
International application No.
PCT/EP2004/014308

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/014308

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	3-7
	No: Claims	1,2
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/014308

Re Item V.

- 1 Reference is made to the following document:

D1 : EP 0 157 925 A (SIEMENS AKTIENGESELLSCHAFT; SIEMENS
AKTIENGESELLSCHAFT BERLIN UND MUNC) 16 October 1985 (1985-10-16)
D2: US-A-4 767 438 (BATES ET AL) 30 August 1988 (1988-08-30)

2 Novelty (Article 33(1)(2) PCT)

The present application meets the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 3 is new in the sense of Article 33(2) PCT.

Document D1 does not describe a relative frequency converter.
Document D1 does not describe a roller cleaning process.

Thus document D1 does not disclose all technical features of independent claims 1 and 3, respectively, as a consequence, the subject matter of dependent claims 2 and 4-7 appears to be novel as well.

3 Inventive step (Article 33(1)(3) PCT)

3.1.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D1 discloses an apparatus with a series of motorized rollers for positioning flat rolling products. The rotation rate and direction of each single activatable motor can be controlled and regulated by a control and regulation unit (see claim 1; figure 1, Ref. sign 21, 22; page 8, line 32-35).

Although the wording of claim 1 is aimed at a "roller cleaning device", it is clear from the description that this device is in essence a transportation device of a roller oven for flat blooms in a steel mill. Hence when considering the inventiveness of claim 1, directed at an

apparatus, the technical features of the apparatus should be taken into consideration and not its functional ones nor results to be achieved. However, in the evaluation of the apparatus of D1 it should be taken into consideration whether this apparatus would be suitable for the process at which it is aimed, i.e. cleaning the rollers of a roller oven. As the apparatus of D1 concerns a transport and positioning device for trimming of a slab after the milling process, comprising a series of motorized rollers it can be considered as suitable for the said purpose.

The subject matter of claim 1 differs from document D1 in that a relative frequency converter is used to control the rotation rate of each roll whereas according to document D1 current regulator control is used to control the rotation rate.

The feature "relative frequency converter" is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances like the use of AC-motors (like in application) instead of DC-motors (like in document D1), without the exercise of inventive skill, in order to solve the problem posed.

Thus independent claim 1 does not involve an inventive step (Article 33(1)(3) PCT).

3.1.2 In dependent claim 2 a slight constructional change is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of claim 2 lacks an inventive step.

3.2.1 With respect to claim 3 the criteria of Article 33(1) PCT are considered to be met, because the subject-matter of this claim involves an inventive step in the sense of Article 33(3) PCT.

The problem to be solved by the present invention may be regarded as finding a cleaning process of the rolls of a roller oven during the functioning of the roller oven itself and so to save time and costs.

The solution to this problem proposed in independent claim 3 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: The application describes a roller cleaning process in which the rotation of at least one roller of a group of rollers causes the scraping of the roller against the flat bloom so as to remove the flakes of oxides from the rotating roll. The roll is cleaning itself without using an separate cleaning apparatus.

Document D2, which is considered to be the closest prior art, describes a cleaning apparatus and process for rolls but does not show a solution of the posed problem.

Although D1 discloses the same apparatus it does not teach in any way how to operate this apparatus in order to clean the rollers from any adhered oxides. Therefor the person skilled in the art is not instructed nor given any direction as to a process for cleaning the rollers of a roller oven in the way suggested in claim 3 of the present application.

Thus, the subject matter of independent claim 3 involves an inventive step (Article 33(1)(3) PCT).

3.2.2 Claims 4-7 are dependent on claim 3 and as such also meet the requirements of the PCT with respect to novelty and inventive step.